Water Resources Regional Planning Pilot Study
For
South Cumberland Plateau

Phase I

05 June, 2009

Presentation Outline

- **Scope of Studies**

- **Schedule and Cost**

- **Areas of Study**

- **Water Demand, Use, and Waste Water Use**

Scope of Studies

The purpose of this study phase was to:

- Document existing water source information, use, and demand for study areas

- Document existing water and wastewater system information

- Develop GIS database

- Develop a scope of work for the next phase

Tasks Accomplished

- **General water resource use information within the planning region has been compiled**

- **Existing studies within planning region have been identified**

- **Data has been collected to establish a GIS database**

- **Existing source yield data is being collected**

- **Final Phase I report has been produced**

Schedule

- **SEPT 2008
  Sign cost sharing and agreement**

- **OCT 2008
  Funding Received**

- **Nov 2008
  Project Steering team met to discuss implementation plans**

- **JAN 2009
  Preliminary report**

- **FEB 2009
  Draft presentation for Sponsor/Corps input**
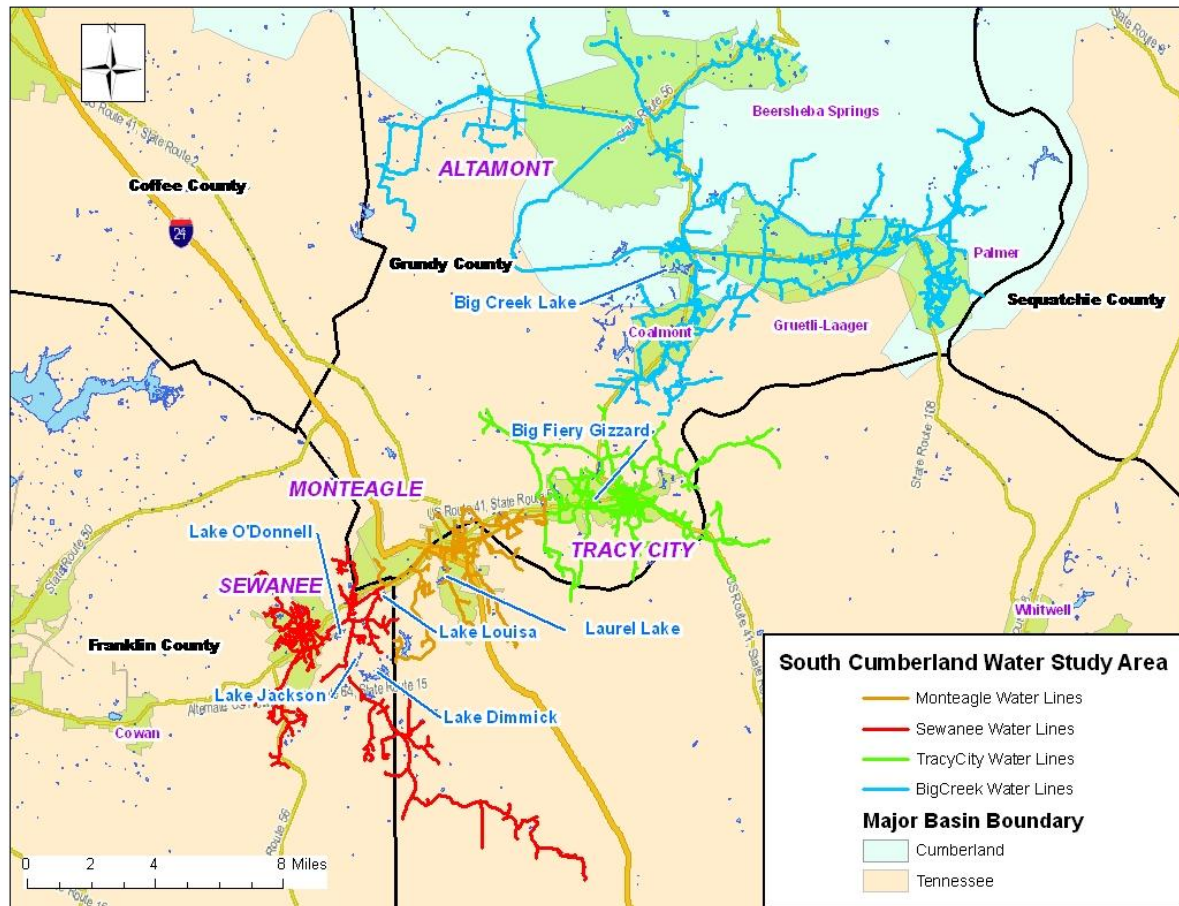
- **MARCH 2009
  Report complete**

Southern Cumberland Plateau Study Area

- **Principal Utility Systems**
  - **Sewanee**

  - **Tracy City**

  - **Monteagle**

  - **Big Creek Utility**

Southern Cumberland Plateau Area

Southern Cumberland Water Sources

- **Big Creek Lake**

- **Laurel Lake**

- **Lake Louisa**

- **Lake O'Donnell**

- **Lake Jackson**

- **Big Fiery Gizzard Reservoir**

Southern Cumberland Water Sources

Utility	Water Supply Source	Storage Capacity (MG)
Big Creek	Big Creek Reservoir	254
Monteagle	Lake Laurel - Primary	213
	Lake Louisa - Emergency	94
Sewanee	Lake O'Donnell - Primary	62
	Lake Jackson - Secondary	112
	Lake Dimmick (Day Lake) - Emergency	218
Tracy City	Big Fiery Gizzard Reservoir	200

Monteagle: Laurel Lake – Primary Intake

Monteagle: Lake Louisa – Emergency Intake

Sewanee: Lake Jackson – Secondary Source

Sewanee: Lake Dimmick – Emergency Source

Tracy City: Big Fiery Gizzard Lake Intake

Big Creek Lake Spillway

Southern Cumberland Plateau Area Water Use

WATER SYSTEMS	TREATMENT PLANT CAPACITY (mgd)	SOURCES/BUYERS/ SUPPLIERS	Withdrawal (mgd)	Water Purchased (mgd)	Water Sold (mgd)	Gross Water Use (mgd)
Big Creek	1.5	Big Creek Reservoir	1	–	–	0.765
		Cagle/Fredonia (buyer)	–	–	0.17	
		Griffith Creek (buyer)	–	–	0.065	
Monteagle	1	Lake Laurel	0.35	–	–	0.295
		Lake Louisa	–	–	–	
		Tracy City (seller)	–	0.055	–	
Sewanee	0.56	Lake O'Donnell	0.325	–	–	0.325
		Lake Jackson (Secondary)	(water is pumped from Jackson into O'Donnell)	–	–	
		Lake Dimmick (Emergency)	(water is pumped from Dimmick into Jackson)	–	–	
Tracy City	0.936	Fiery Gizzard	0.45	–	–	0.35
		Foster Falls (buyer)	–	–	0.045	
		Monteagle (buyer)	–	–	0.055	

South Cumberland Plateau Water System Connections

US ARMY CORPS Of Engineers ®
Nashville District

Utility Districts	Connection Size
Sewanee & Monteagle	6"
Monteagle & Tracy City	6"
Tracy City & Big Creek	6"

South Cumberland Water Demand

Utility	Approx. Pop. Served	# of Accounts	Residential Accounts	Commercial Accounts	Industrial Accounts	Other Accounts	Avg. Quantity of Water Billed (mgd)	Estimate of Water Losses[2]
Big Creek	8029	3099	2909	190	-	-	0.68	20%
Monteagle	2784	1385	1075	126	-	-	0.24	20%
Sewanee	3010	1400	1400	-	-	-	0.29	18%
Tracy City	3600	1497	1396	101	-	-	0.33	6%

US Army Corps Of Engineers ®
Nashville District

Utility	Approx. Population of Service Area[1]	Approx. Population Served[1]	Self Supplied Water Users	Avg. Household Size[1]	Potential New Residential Accounts	Self Supplied Water Use (GPD)[2]
Big Creek	11,612	8,029	3,583	2.76	1,298	214,980
Monteagle	2,894	1,784	110	2.59	43	6,600
Sewanee	3,293	3,010	283	2.15	132	16,980
Tracy City	4,144	3,600	544	2.51	217	32,640

1   Data derived from US 2000 Census

2   Data derived using an average of 60 gallons per person per day

South Cumberland Waste Water Data

Utility	Existing Capacity of WW Treatment (mgd)	# Sewer Customers	Method of Discharge	Location of WWTP	Location of Discharge	Avg. Discharge (mgd)
Big Creek	-	-	-	-	-	-
Monteagle	0.5	333	Direct Discharge	US Hwy 41 & Us Hwy 41A	Jaunita Creek and tributary to Trussell Creek	0.305 (Jaunita Creek) & 0.051 (Trussell Creek)
Sewanee	0.56	660	Land Application	150 Sherwood Rd	150 Sherwood Rd	-
Tracy City	-	51	Pumped to Monteagle	-	-	-

Existing Water Supply Studies for South Cumberland Study Area

US Army Corps Of Engineers ®
Nashville District

- The Municipal Waterworks of Tracy City conducted a Strategic Plan for 2007-2027 that was prepared by Nolen Engineering Group LLC on April 2007.

- Sewanee Utility District of Franklin and Marion Counties conducted a Raw Water Source Study that was prepared by Consolidated Technologies, INC. on July 2, 2008.

- Sewanee Utility District of Franklin and Marion Counties conducted a Raw Water Source Study Phase II Calibration that was prepared by Consolidated Technologies, INC. on July 25, 2008.

- Sequatchie Valley conducted a Water Supply Study for the Southeast Tennessee Development District that was prepared by GRW Elrod Dunson, Inc. on August 2004.

- Cagle and Fredonia Utility District conducted a study for the safe yield of Dunway and Laurel Lake, prepared by James C. Hailey & Company, on April 9, 2007.

- Preliminary Engineering Report on Southern Cumberland Plateau Permanent Water Source for Grundy County, Tennessee Appalachian Regional Commission Application, Prepared by James C. Hailey & Company on June 2008.

Phase II Scope of Work

US Army Corps Of Engineers ®
Nashville District

- Critical regional drought identification

- Completion of existing water source yield analysis

- Water demand projections

- Determination of alternative water sources

- Alternative water source yield analaysis

- Identification of water demand management opportunities

- Coordination of public notice and public comment opportunities

- **South Cumberland Plateau**
  - **Big Creek**
    - **Cagle/Fredonia**
    - **Griffith Creek**
  - **Tracy City**
    - **Foster Falls**
  - **Monteagle**
  - **Sewanee**